Complete Summary

GUIDELINE TITLE

Management of whiplash associated disorders.

BIBLIOGRAPHIC SOURCE(S)

International Chiropractors Association of California. Management of whiplash associated disorders. Sacramento (CA): International Chiropractors Association of California; 2009. 55 p.

GUIDELINE STATUS

This is the current release of the guideline.

COMPLETE SUMMARY CONTENT

SCOPE

DISEASE/CONDITION(S)

Acute and chronic whiplash injuries and whiplash-associated disorders (WAD)

GUIDELINE CATEGORY

Diagnosis
Evaluation
Management
Treatment

CLINICAL SPECIALTY

Chiropractic

INTENDED USERS

Chiropractors

GUIDELINE OBJECTIVE(S)

To provide a structure for the assessment and treatment of people with whiplash-associated disorders (WAD) during the first 12 weeks following injury and additional care in chronic cases

TARGET POPULATION

Individuals with suspected or confirmed whiplash-associated disorders

INTERVENTIONS AND PRACTICES CONSIDERED

Diagnosis/Evaluation

1. Patient history
2. Physical examination
3. Symptom assessment
4. Diagnostic imaging (x-ray, magnetic resonance imaging [MRI], kinetic MRI, computed tomography [CT], single photon emission computed tomography [SPECT] scan, videofluoroscopy)
5. Electromyography
6. Subluxation assessment
7. Classification of injury according to whiplash-associated disorders (WAD) grade
8. Classification of injury using Neck Disability Index (NDI)
9. Pain assessment using Visual Analogue Scale (VAS) or numeric pain score (NPS)
10. Orthopedic and neurological examination
11. Psychological assessment using Impact of Event Scale (IES)
12. Additional special tests for thoracic outlet syndrome or cervical instability
13. Discharge criteria

Treatment/Management

1. Manual treatment - adjustments/mobilization
2. Exercise therapy
3. Transcutaneous electrical nerve stimulation (TENS)
4. Traction
5. Ultrasound treatment
6. Laser treatment
7. Shortwave diathermy
8. Massage, heat,Â ice
9. Acupuncture
10. Pulsed electromagnetic treatment (PEMT)
11. Patient education and adviceÂ
12. Combination therapy
13. Prescribed function or work alteration

14. Nutritional supplements (omega-3 fatty acids, anti-oxidants, natural anti-inflammatories)
15. Simple analgesics and nonsteroidal anti-inflammatory drugs (NSAIDs)
16. Opioid analgesics (for severe pain only)
17. Psychopharmacologic drugs (not recommended routinely)
18. Intravenous methylprednisolone (not recommended for acute management)
19. Manipulation under anesthesia/sedation
20. Referral to whiplash specialist
21. Surgery
22. Regeneration injection therapy

MAJOR OUTCOMES CONSIDERED

- Sensitivity, specificity, and predictive value of diagnostic assessments
- Pain relief
- Improvement of whiplash symptoms
- Degree of disability
- Functional status
- Duration of symptoms

METHODOLOGY

METHODS USED TO COLLECT/SELECT EVIDENCE

Hand-searches of Published Literature (Primary Sources)
Hand-searches of Published Literature (Secondary Sources)
Searches of Electronic Databases

DESCRIPTION OF METHODS USED TO COLLECT/SELECT THE EVIDENCE

English-language studies were identified through searches of MEDLINE, MANTIS and CINAHL. Electronic searches were supplemented by hand searching of reference lists and other relevant guidelines. Additional citations were suggested by experts. Initial searches began in 2006 and ended in May 2009.

Studies were included if they reported on diagnosis or treatment of whiplash injury. Specific search terms used in the searches included: whiplash injury, facet, disc, treatment, chiropractic, whiplash guidelines, imaging.

NUMBER OF SOURCE DOCUMENTS

Not stated

METHODS USED TO ASSESS THE QUALITY AND STRENGTH OF THE EVIDENCE

Expert Consensus

RATING SCHEME FOR THE STRENGTH OF THE EVIDENCE

Not applicable

METHODS USED TO ANALYZE THE EVIDENCE

Review

DESCRIPTION OF THE METHODS USED TO ANALYZE THE EVIDENCE

Not stated

METHODS USED TO FORMULATE THE RECOMMENDATIONS

Expert Consensus

DESCRIPTION OF METHODS USED TO FORMULATE THE RECOMMENDATIONS

Not stated

RATING SCHEME FOR THE STRENGTH OF THE RECOMMENDATIONS

Not applicable

COST ANALYSIS

A formal cost analysis was not performed and published cost analyses were not reviewed.

METHOD OF GUIDELINE VALIDATION

Not stated

DESCRIPTION OF METHOD OF GUIDELINE VALIDATION

Not applicable

RECOMMENDATIONS

MAJOR RECOMMENDATIONS

Assessment and Treatment of Whiplash Associated Disorders (WAD) in First 12 Weeks

Initial Assessment

Classify the WAD injury. Although higher WAD grades indicate greater severity, poor prognosis is most likely associated with a high Visual Analogue Scale (VAS)/numeric pain score (NPS) >7/10) or high Neck Disability Index (NDI) score

(>20/50). The SF-36 may be also be used. Orthopedic & neurological examination. Clinician determines imaging necessity.

Apply recommended treatments.

Seven Day Reassessment

Reassess, including the VAS/NPS and NDI. If the VAS/NPS and NDI are high or unchanged, treatment type and intensity should be reviewed. Other treatments may be considered. The effectiveness of such treatments should be closely monitored and only continued if there is evidence of benefit (at least 10% change on VAS and NDI).

Three Week Reassessment

Reassess, including the VAS/NPS and NDI. If the VAS/NPS and NDI are unchanged, a more complex assessment may need to be considered and treatment type and intensity should again be reviewed. The Impact of Event Scale (IES) may be used as a baseline for psychological assessment. Other recommended scales can be used. If pain and disability are still high (VAS, NPS >5.5) and NDI (>20/50) or unchanged, consider referral to a specialist in Whiplash Associated Disorders (WAD).

A specialist is considered a practitioner with specialized expertise in the management of WAD. These may include chiropractors, medical physicians, pain medicine specialists and other physicians who specialize in WAD. Among other things, if the VAS/NPS and NDI are unchanged, the specialist should undertake a more complex physical and/or psychological examination. They should direct more appropriate care and liaise with the treating practitioner to ensure this is implemented.

Six Week Reassessment

Reassess again at this point. In at least 30% of cases resolution should be occurring, and the process of reducing treatment in these cases should commence or continue. If resolution is not occurring and the VAS/NPS and NDI have not changed by at least 10% from the last review, specialist care should still be followed, or a specialist should be referred to if this has not already been done. Prescribe home programs for functional improvement. Consultation with a whiplash specialist may be needed if pain or disability are still high (VAS, NPS >5.5, NDI >20/50) or unchanged.

Three Month Reassessment

Assessment should Include VAS/NPS and NDI. Resolution usually occurs in approximately 50% of cases. If the patient is still improving, continue treatment; independence should be promoted (e.g., focus on active exercise). In these resolving cases, the patient should be reviewed intermittently over the next six to 12 months until resolution. Prescribe home programs to maintain improvement. Consultation with a whiplash specialist is usually required. At this point, referral to a clinical psychologist may also be considered if the psychological assessment

data is markedly below norms (for the IES this means a score of >26 at six weeks after injury).

Coordinated Care

Patients whose VAS/ NPS and/or NDI scores are not improving at this point are likely to require coordinated care that is multidisciplinary. It is likely that a combination of physical, psychological and medical care is required. The primary practitioner should facilitate this process.

Range of Possible Symptoms in Whiplash Disorders

Refer to the original guideline document for a description of the possible symptoms of WAD, which include:

- Neck pain
- Headache
- Radiating pains to the head, shoulder, arms or interscapular areas
- Generalized hypersensitivity
- Paresthesia and muscle weakness
- Symptoms from the temporomandibular joint
- Visual disturbances
- Proprioceptive control of head and neck position
- Vertigo/dizziness
- Impaired cognitive function
- LowÂ back pain
- Carpal tunnel syndrome
- Double crush syndrome

Delay in symptoms is not uncommon. Symptoms may be delayed for hours, days, or longer.

Physical Examination

Taking Patient History

Taking a patient's history is important during all visits for the treatment of patients with WAD of all grades. A patient's history should include information about: date of birth, gender and education level; circumstances of injury such as relevant crash factors; symptoms, particularly including pain intensity (using the Visual Analogue Scale [VAS] or similar). Stiffness, numbness, weakness and associated extra cervical symptoms; localization, time of onset and profile of onset should also be recorded for all symptoms; disability level, preferably using the Neck Disability Index (NDI). Other scales such as the Functional Rating Index, Patient-Specific Functional Scale, Short Form Health Survey SF-36, or similar may also be used. Such an assessment should be conducted on a patient´s second visit at seven days, if not initially; and prior history of neck problems including previous whiplash injury.

Where appropriate, further assessment to determine psychological status may be undertaken at three or six week review. The preferred tool is the Impact of Event

Scale (IES), which is a validated tool. Other scales may be useful. History details should be recorded. A standard form may be used.

Observation (particularly of head position/posture); palpation for tender points; assessment of range of movement (ROM) including flexion (chin to chest), extension, rotation and lateral flexion; neurological testing; assessment of associated injuries; and an assessment of general medical condition(s), including psychological state (as appropriate).

A further, more specialized, physical examination assessment might include: assessment of joint position error; assessment of neck muscle activity; and an assessment of widespread sensitivity (which may include cold sensitivity, pressure pain threshold and/or the brachial plexus provocation test, qualitative sensory perception).

Tools, such as a universal goniometer or inclinometer, can be used to measure neck ROM, and are more reliable than observation.

A standardized form may be used.

History and Physical Examination

- Date of birth, gender, height weight, blood pressure, pulse rate, education level
- Prior medical history, general medical condition, and pre-existing conditions
- Symptoms including stiffness, numbness, onset of symptoms
- Prior history of whiplash symptoms, neck injury, or pain or chronic pain symptoms
- Observation of head position and posture
- Palpation for tenderness in the neck region
- Cervical range of motion
- Neurological testing of sensation, reflexes and muscle strength
- Assess associated injuries and co-morbidities

Baseline Assessment

- Disability level using self report instrument (NDI)
- Pain intensity using a visual analogue scale (VAS) or numeric pain scale (NPS)
- Look for lacerations, fractures, or other abnormalities requiring urgent intervention
- Note any deformities, swelling, asymmetry, atrophy or erythema
- Feel the areas of pain and surrounding structures. Examine for tenderness, deformity, crepitus and muscle spasm. Flaccidity, fasciculations and spasticity may indicate nervous system damage. Note particularly sensitive areas of palpation as this may help to determine etiology of pain (e.g., muscular versus facet)
- Palpate the temporomandibular joints (TMJs) and adjacent musculature, including the masseter and temporalis muscles. Assess these joints by having the patient open, close and move the jaw from side to side. Note any pain, tenderness, clicking, popping or asymmetric jaw movement. Make note of jaw excursion and the location of pain that limits it. Have the patient move the region being tested. If the patient´s movement is restricted, passive

movement should be attempted as the pain allows. It may not be possible to passively move the region farther due to pain, but this also allows the examiner to gauge the source of pain, limitation and degree of musculature tautness.

Screening Neurological Motor Exam

The integrity and mobility of the nervous system needs to be examined and tests should include:

- The integrity of the nervous system including testing myotomes, dermatomes and reflexes when indicated by the distribution of the symptoms
- Mobility tests may include passive neck flexion (PNF), upper limb tension tests (ULTT), passive knee bend, straight leg raise (SLR) and the slump test.
- The plantar response should be examined to exclude an upper motor neuron lesion.
- Tests for clonus should be carried out to exclude an upper motor neuron lesion.

Refer to the original guideline document for further details on the neurological motor exam.

Subluxation Assessment

Vertebral Position Assessed Radiographically; Abnormal Segmental Motion Assessed Radiography

To demonstrate a subluxation based on physical examination, two of the four criteria mentioned below are required, one of which must be **asymmetry/misalignment** or **range of motion abnormality**.

- **P**ain/tenderness evaluated in terms of location, quality, and intensity; Pain, facet syndrome, trigger points, etc.
- **A**symmetry/misalignment identified on a sectional or segmental level; Asymmetric or Hypertonic Muscle Contraction.
- **R**ange of motion abnormality (changes in active, passive and accessory joint movements resulting in an increase or decrease of sectional or segmental mobility); Abnormal Segmental Motion/Lack of Joint End-play.
- **T**issue, tone changes in the characteristics of contiguous, or associated soft tissues, including skin, fascia, muscle, and ligament; Soft Tissue Compliance and Tenderness.

Special Tests

- Thoracic outlet syndrome. Various tests for this complex syndrome include the Allen Test, Adson´s maneuver and provocative elevation tests.
- Upper cervical stability. Test for instability in the presence of certain signs (inability to support the head, dysphagia, tongue paresthesia, a metallic taste in the mouth, facial or lip paresthesia, bilateral limb paresthesia, quadrilateral limb paresthesia, nystagmus, gait disturbance).

Radiographic Imaging

Age ≥65 yr, dangerous mechanism, paresthesias in extremities, midline cervical spine tenderness, unable to rotate neck 45 degrees left and right, pain or limitation of motion, suspected spinal instability, x-rays are recommended. Magnetic resonance imaging (MRI) may be indicated early in radiculopathy/myelopathy.

The Examination

Refer to the original guideline document for the Current Procedural Terminology (CPT) code that includes a detailed examination. A detailed, single-organ system examination should include at least 12 elements identified by a bullet within the system/body area(s) being examined according to the 1997 documentation guidelines on Evaluation and Management (E/M) services.

Usually the presenting problem(s) are of moderate severity and the physician typically spends 30 minutes face-to-face with the patient and/or family. E/M requires the following three key components:

- Detailed history
- Detailed examination
- Medical decision making of low complexity

6 Weeks to 3 Months
With continued moderate/severe complaints: Dynamic surface electromyography (sEMG) MRI Videofluoroscopy Quantitative sensory testing
Specialized Imaging Techniques
WAD Grade III Specialized imaging techniques might be used in selected patients; e.g., nerve root compression or suspected spinal cord injury, WAD Grade III, on the advice of a whiplash, medical or surgical specialist.
Specialized Examinations
Examples of such examinations include electroencephalography (EEG), electromyographic (EMG) specialized neurological tests, depending on signs/symptoms.

- Standard MRI may be used for signs and symptoms of radicular disorders.
- Evaluating soft tissues after trauma or surgery, short T1 inversion recovery (STIR) or T2-weighted fat-suppressed fast-spin-echo (FSE) sequences are recommended.

- FSE sequences can be used to decrease imaging times, to increase resolution, or to improve signal-to-noise ratios on T2-weighted images.
- MRI proton-density weighted sequences of 2 mm or less may show damage to the alar ligaments and ligamentous structures in the craniovertebral junction.
- Alterations in the static alignment of the cervical curvature cause alterations in the dynamic kinematics of the cervical spine during cervical flexion-extension.
- Motion MRI (kinetic MRI) has been shown to demonstrate significant differences in biomechanical function between normal patients and injured patients following rear, low-impact motor vehicle collisions.
- Kinetic MRI (kMRI) delivers the ability to scan patients in neutral, flexion, and extension positions, which may allow for improved diagnosis. A significant increase in the degree of lumbar disc herniation was found by examining flexion and extension views when compared with neutral views alone. kMRI views provide valuable added information, especially in situations where symptomatic radiculopathy is present without any abnormalities demonstrated on conventional MRI.
- Single photon emission computed tomography/computed tomography (SPECT/CT) may be helpful in certain conditions.
- Surface electromyography may be helpful in patients with cervical spine and low back disorders.
- Patients with whiplash associated disorder Grade II can be distinguished from healthy control subjects according to the presence of cervical muscle dysfunction, as assessed by surface electromyography of the upper trapezius muscles.
- Videofluoroscopy screening may be useful in for and evaluating for cervical instability injuries.
- Quantitative sensory testing may be useful in identifying small or large fiber sensory abnormalities.
- For addressing chiropractic use of x-rays, see: www.pccrp.org.

Examination - Videofluoroscopy

The following signs may be helpful in the selection of patients for musculoskeletal videofluoroscopy in those cases with persistentÂ signs and symptoms following an appropriate conservative management:

- Hypermobility
- Hypomobility
- Aberrant motion
- Instability
- Aberrant coupling
- Paradoxical motion
- Evaluation of spinal arthrodesis

Cervical Spine Examinations

A. Minimum Examination (Includes the following, but must be preceded and supported by clinical and radiographic findings).Â A minimum of three repetitions should be performed and all fluoroscopic exposure must be recorded digitally or videotaped.
    1. Lateral projection

- Nodding
- Full range "forced" flexion and extension
- Relaxed flexion and extension

2. Oblique right and left full range "forced" flexion and extension

B. Additional Examinations (as indicated): Right and left lateral flexion (open mouth and lower cervical)
C. Optional Examination: Unsupported cross table lateral flexion/extension
D. Check Ligament (ALAR) Examination
    1. Lateral view, nodding
    2. Right and left lateral flexion open mouth
    3. Passive Stress views. Cases of incomplete tear can only be demonstrated by a passively forced lateral flexion maneuver.

Lumbar Spine Examinations

4. Lateral projection in flexion and extension
5. Anteroposterior (AP) right and left lateral bendingÂ

Red Flags

Refer to the original guideline documents for the following discussions of red flags:

- Defining red flags
- Red flags - spinal conditions (cervical myelopathy, cauda equina syndrome)
- Medical screening for red flags

Prognosis

Refer to the original guideline document for a discussion of symptoms and factors associated with prognosis, including factors associated with poor prognosis.

Criteria for Discharge

Utilizing outcomes questionnaires as a component in determining when a patient has reached maximum improvement and is ready to be discharged from therapeutic care.

A return to normal function, or a plateau in improvement, in these criteria may be used to indicate that a patient has reached maximum benefit from care.

Range of motion: A goniometer or inclinometer provides an accurate tool to assess this function.

Muscle testing: Assess muscle strength, endurance and flexor-extensor ratios utilizing manual or computerized testing devices.

Postural analysis: Assess anterior translation of the head, spinal curves and other postural landmarks with computerized devices, digital photos or plumb-line analysis.

Special functional goals for care: Evaluate other activities of daily living (ADLs), essential functions and critical demands of employment necessary for the patient to return to pre-injury status.

Maximum Improvement is achieved when there is no improvement in clinical status for a period of 2 months as assessed with standard measurement outcomes (visual analog scale, Oswestry, Neck Disability Index, SF-36, etc.)

If treatment is withdrawn and the patient´s clinical status becomes worse, the patient has not achieved Maximum Medical Improvement.

Treatment of Acute Whiplash-Associated Disorders

- Maintaining normal life activities
- Staying active is important in the recovery process
- Focus on improvements in function

Treatment Recommendations for Whiplash in the Acute Stage (zero to two weeks after injury)

Manual Treatment - Adjustments/Mobilization

- Adjustments/Manual mobilization should be considered for the reduction of neck pain.
- Adjustments/Manual mobilization should be considered to increase neck range of movement.
- Adjustments/Manual mobilization should be considered to improve function.
- Soft tissue techniques should be considered for the reduction of pain.

Exercise Therapy

- Active exercise should be used to reduce pain.
- Active exercise for pain reduction should be started within four days of injury.
- An active exercise program devised for each individual following assessment should be considered for the reduction of pain.

Modalities (Including Electrotherapy) That May Be Used in Support of Active Therapy and Flare-ups

- Transcutaneous electrical nerve stimulation TENS could be considered for reducing pain.
- Traction
- Ultrasound treatment
- Laser treatment
- Massage
- Acupuncture
- Pulsed electromagnetic therapy (PEMT)

Education and Advice

- Advice on self-management should be provided to reduce patients' symptoms.
- Returning to normal activities as soon as possible should be encouraged.
- Providing education about the origin of the pain should be considered for reducing pain.
- Providing advice about coping strategies may be helpful for the reduction of pain.
- Relaxation should be considered for reducing pain.

Combining Manipulation/Adjustments and Exercise

- A combination of manipulation and exercise may be more effective than manipulation alone in:
    - Reducing pain
    - Improving function
    - Increasing patient satisfaction

Prescribed Function, Work Alteration

Prescribed function (i.e., return to usual activity as soon as possible) is recommended. Rehabilitation programs, which may include alteration to an individual´s work schedule, may assist recovery depending on symptoms (e.g., pain, ability to concentrate) and psychosocial factors.

Exercise

Range of motion (ROM) and muscle re-education exercises to restore appropriate muscle control and support to the cervical region in patients with WAD should be implemented immediately, if necessary in combination with intermittent rest when pain is severe. Clinical judgment is crucial if symptoms are aggravated by exercise.

Exercise Therapy

- Combined advice about coping strategies and exercise may be more effective than exercise alone in assisting people´s return to normal activity.
- Mobilizing exercises should be considered for the reduction of pain.
- Group exercise should be considered to improve function.
- Proprioceptive exercises should be considered to improve function.
- Strengthening exercises may be more effective than passive treatment in improving function and in reducing pain.
- Exercise based on individual assessment is likely to be better than general exercise in improving function.
- Standard exercise (stretching, isometric, isotonic) to improve function
- Extension retraction exercises could be considered to improve neck function.

Nutritional and Medications

- Omega 3 fatty acids, anti-oxidants and natural anti-inflammatories

- Only simple analgesics should be prescribed for WAD Grade I.
- Nonsteroidal anti-inflammatory drugs (NSAIDs) and non-opioid analgesics may be used for short term pain relief in WAD Grade II and III.

Medical Pharmacology

- Medical pharmacology includes simple analgesics/NSAIDs.
- WAD Grade I – no medication other than simple analgesics should be prescribed.
- WAD Grades II and III – non-opioid analgesics and NSAIDs can be used to alleviate pain in the short term. Their use should be limited to a few weeks and should be weighed up against known side effects, which appear to be dose related.
- Opioid analgesics are not recommended for patients with WAD Grade I. They may be prescribed for pain relief in patients with acute WAD Grades II and III experiencing severe pain (VAS > 8) for a limited period of time.
- Psychopharmacologic drugs are not recommended in patients with acute and subacute WAD of any grade. However, they can be used occasionally for symptoms such as insomnia or tension or as an adjunct to activating interventions in the acute phase.
- Use of high dose intravenous methylprednisolone infusion for acute management of WAD Grades II and III is not recommended.
- Opioid analgesics may be prescribed for short term pain relief of severe pain (VAS > 8) in acute WAD Grade II and III.

Postural Advice

Postural advice should be given in combination with manual and physical therapies and exercise.

Traction

A regime of traction should only be given to patients with WAD in combination with manual and physical therapies and exercise, with evidence of continuing measurable improvement.

Acupuncture

A regime of acupuncture should only be given to patients with WAD in combination with manual and physical therapies and exercise, with evidence of continuing measurable improvement.

Modalities

For acute whiplash and flare-ups, other professionally administered passive modalities/electrotherapies are optional adjuncts to manual and physical therapies and exercise, with emphasis on return to usual activity as soon as possible.

Modalities/electrotherapies include heat, ice, massage, transcutaneous electrical nerve stimulation (TENS), pulsed electromagnetic treatment (PEMT), electrical stimulation, ultrasound, laser, and shortwave diathermy.

Manipulation Under Anesthesia/Sedation

During the treatment Manipulation under anesthesia/sedation may be beneficial in patients with chronic pain that affects work or activities of daily living. This procedure has been shown to be effective in selected cases.

Surgical Treatment

Surgery is uncommon in patients with WAD. Surgery may be indicated in Grade III with persistent arm pain consistent with cervical radiculopathy (supported by appropriate investigations) that does not respond to conservative management, or with rapidly progressing neurological deficit. Other invasive measures may be needed depending upon the case.

Regeneration Injection Therapy (RIT)

Invasive intraarticular regeneration injection therapy can improve pain and function. RIT can last as long as or longer than patients with radiofrequency neuroanatomy. When combined with spinal manipulation, exercise and other co-interventions, prolotherapy may improve chronic back pain and disability.

Stages of Injury

Refer to the original guideline document for definitions of stages of injury (I-IV).

Grades of Severity of Injury

Refer to the original guideline document for definitions of grades of severity of injury (I-V).

Frequency and Duration Guidelines

Guidelines for Frequency and Duration of Care in Cervical Acceleration/Deceleration Trauma							
Â	**Daily**	**3x/week**	**2x/week**	**1x/week**	**1x/month**	**T_D[1]**	**T_N[2]**
Grade I	1 wk	1-2 wk	2-3 wk	<4 wk	...[3]	<11 wk	<21
Grade II	1 wk	<4 wk	<4 wk	<4 wk	<4 mo	<29 wk	<33
Grade III	1-2 wk	<10 wk	<10 wk	<10 wk	<6 mo	<56 wk	<76
Grade IV	2-3 wk	<16 wk	<12 wk	<20 wk	...[3]	...[3]	...[3]
Grade V	Surgical stabilization necessary--chiropractic care is post-surgical						

Adapted from: Croft AC. Treatment paradigm for cervical acceleration/deceleration injuries (whiplash). Am Chiro Assoc J Chiro 30(1): 41-45, 1993.

[1] T_D indicates treatment duration; T_N treatment total number

[2] Possible follow-up at 1 month.

[3] May require permanent monthly or as needed (p.r.n.) treatment.

Mercy Conference Guidelines

Acute uncomplicated case (<6 wks symptoms): Up to 5 visits a week for the first 2 weeks, then 3 visits a week after that for a maximum of 6–8 weeks (maximum 28 visits) to return to preepisode status.

Subacute case (>6 but less than 16 weeks): average 2 visits a week for 6 to 16 weeks (max 16 visits) to return to pre-episode status.

Chronic case: passive care not indicated unless there has been an acute exacerbation of the chronic condition.

Complicated case: exceeds the recommended duration of care but still fits within the guidelines.

Pain >8 days duration before presenting for care may take 1.5x longer to recover.

Severe pain may take 2x longer to recover.

4 to 7 previous episodes may take 2x longer.

Pre-existing conditions, underlying pathologies or anomalies may take 1.5 to 2 times longer.

Factors complicating recovery:

- Biomechanical stress
- Psychological stress
- Poor compliance
- Prolonged static stress
- Re-injury exacerbation
- Multilevel degenerative joint diseaseÂ
- Spondylolisthesis

All may delay recovery and necessitate a need for additional care that may exceed the recommended guidelines for simple uncomplicated cases.

Adapted from: Haldeman S, Chapman-Smith S, Peterson SM. Guidelines for Chiropractic Quality Assurance and Practice Parameters: Proceedings of the Mercy Center Consensus Conference. Frederick, Maryland, U.S.A. Aspen Pub. 1992. Chapter 8.

Recently published the Council on Chiropractic Guidelines and Practice Parameter (CCGPP) recommendations in support of manipulation for both acute and chronic low back pain closely mirrors that of the Mercy Conference and other reviews.

Frequency and Duration for Continuing Courses of Treatments

Stage of Condition	Frequency	Duration (wk)	Re-evaluate after (No. of Treatments)
Acute	2-3x weekly	2-4	4-12
Subacute	2-3x weekly	2-4	4-12
Chronic	1-3x weekly	2-4	2-12
Recurrence/Flare-up	1-3x weekly	1-2	1-6

Adapted from: Globe GA, Morris CE, Whalen WM, Farabaugh RJ, Hawk C; Council on Chiropractic Guidelines and Practice Parameter. Chiropractic management of low back disorders: report from a consensus process. J Manipulative Physiol Ther. 2008Â Nov-Dec;31(9):651-8.

International Chiropractic Association Best Practice Guidelines

Equivalent Treatment Parameters

Grade I **#1C**

1C) 3 visits per week for 7 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 25 visits in 11 weeks)

Grade II **#2C**

2 C) 3 visits per week for 7 weeks + 12 visits for 4 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 37 visits in 15 weeks)

Grade III **#6C**

6 C) 3 visits per week for 7 weeks + 60 visits for 20 weeks + 1 visit per week for 4 weeks + 1 follow-up exam visit; (which is 85 visits in 31 weeks)

Adapted from: ICACBPG Chapter 11 Frequency & Duration RecommendationsÂ www.icabestpractices.org

Refer to the original guideline document for information on the following topics:

- Common factors potentially complicating whiplash trauma management
- Imaging--Significant signs of cervical spine trauma

Table: Treatment Adjuncts in Cervical Acceleration/Deceleration Trauma

Modality	Stage I	Stage II	Stage III	Stage IV
Cervical Pillow	All grades	All grades	All grades	All grades
Cervical Collars	As needed, temporary use.			
- Rigid	Grades III-V	Grades III-V	-----	-----

Modality	Stage I	Stage II	Stage III	Stage IV
- Soft	Grades II and III	-----	-----	-----
Home Traction	-----	Grades II-IV unless contraindicated	Grades II-IV	Grades II-IV
Home Exercise	-----	Grades II-IV unless contraindicated	Grades II-IV unless contraindicated	-----
Ice	All grades	All grades	As needed	-----
Vitamin/Mineral Supplements	All grades	All grades	All grades	Recommended
Deep Tissue Massage	Grades II-IV	Grades II-IV	As needed	-----

Adapted from: Foreman SM ,Croft AC (eds): Whiplash Injuries: the Cervical Acceleration/Deceleration Syndrome, 3rd edition, Lippincott Williams & Wilkins, Baltimore, 2001. Pg. 539.

Refer to the original guideline document for information on the following topics: symptoms of mild traumatic brain injury, post concussion symptoms, outcome measures in whiplash subject, and outcomes assessment.

CLINICAL ALGORITHM(S)

The original guideline document contains clinical algorithms for:

- Evaluation - Initial, 7 Days, 3 Weeks, 6 Weeks, and 3 Months
- Chronic Whiplash Pathway >12 Weeks

EVIDENCE SUPPORTING THE RECOMMENDATIONS

TYPE OF EVIDENCE SUPPORTING THE RECOMMENDATIONS

The type of supporting evidence is not specifically stated for each recommendation. All levels of evidence were considered, not just randomized controlled trials.

BENEFITS/HARMS OF IMPLEMENTING THE GUIDELINE RECOMMENDATIONS

POTENTIAL BENEFITS

Appropriate assessment and treatment of people with whiplash associated disorders

POTENTIAL HARMS

Not stated

QUALIFYING STATEMENTS

QUALIFYING STATEMENTS

- The guideline document is a guide only and there will always be individual variations.
- In this document the maxima guidelines are that considered in a complicated case. Most injuries should not require the maxing out of these guidelines.

IMPLEMENTATION OF THE GUIDELINE

DESCRIPTION OF IMPLEMENTATION STRATEGY

An implementation strategy was not provided.

IMPLEMENTATION TOOLS

Chart Documentation/Checklists/Forms
Clinical Algorithm

For information about availability, see the "Availability of Companion Documents" and "Patient Resources" fields below.

INSTITUTE OF MEDICINE (IOM) NATIONAL HEALTHCARE QUALITY REPORT CATEGORIES

IOM CARE NEED

Getting Better
Living with Illness

IOM DOMAIN

Effectiveness
Patient-centeredness

IDENTIFYING INFORMATION AND AVAILABILITY

BIBLIOGRAPHIC SOURCE(S)

International Chiropractors Association of California. Management of whiplash associated disorders. Sacramento (CA): International Chiropractors Association of California; 2009. 55 p.

ADAPTATION

Not applicable: The guideline was not adapted from another source.

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International Chiropractors Association of California - Medical Specialty Society

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Not stated

COMPOSITION OF GROUP THAT AUTHORED THE GUIDELINE

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FINANCIAL DISCLOSURES/CONFLICTS OF INTEREST

Not stated

GUIDELINE STATUS

This is the current release of the guideline.

GUIDELINE AVAILABILITY

Print copies: Available from theÂ International Chiropractors Association of California, 9700 Business Park Drive, #305, Sacramento, CA 95827. Tel: 800-275-3515.

AVAILABILITY OF COMPANION DOCUMENTS

A variety of implementation tools, including a Pain Disability Questionnaire (PDQ), A Core Whiplash Outcome Measure, and an Impact of Event Scale, are available in the original guideline document.

PATIENT RESOURCES

None available

NGC STATUS

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